DESCRIPTION OF REQUEST

By the associated FCC Form 442 and pursuant to Section 5.54 of the Commission's rules,[1/] T-Mobile License LLC seeks experimental authorization from April 26, 2023 to April 26, 2025 so that its affiliate T-Mobile USA, Inc. ("T-Mobile") can assess use of spectrum in the 3800-3980 MHz ("C-band") in and around multiple locations in California, New York, Texas, and Washington to support its current Fifth Generation New Radio ("5G NR") operations. Grant of the experimental authorization – which would permit operations consistent with the C-band rules and in coordination as necessary with the Federal Aviation Administration ("FAA"), within limited bandwidths, and at locations where T-Mobile has been authorized to operate on a permanent basis – would serve the public interest because it would enable T-Mobile to continue to evaluate use of the C-band pending confirmation that the spectrum has been cleared by incumbent satellite operators, without causing harmful interference to others. That, in turn, will help further ensure the prompt delivery of next-generation wireless services to consumers once the spectrum is cleared.

A. Background

As the Commission is aware, T-Mobile was a winning bidder in the auction for C-band spectrum, submitting $9.3 billion in gross bids and winning 142 licenses covering 72 Partial Economic Areas ("PEAs").[2/] While those licenses were granted to T-Mobile on July 23, 2021,[3/] they are all are subject to the Commission's Phase II accelerated clearing deadline. That means incumbent satellite operators are not required to clear the spectrum, and, absent an agreement with those operators to obtain early access, T-Mobile is not otherwise permitted to use the spectrum until at least December 5, 2023.[4/]

T-Mobile recognizes that the Wireless Telecommunications Bureau recently released a Public Notice seeking comment on procedures for satellite operators to file certifications confirming that they have meet the Phase II clearing deadline.[5/] Thus, it is possible that satellite operators will certify that they have completed clearing of the spectrum associated with the C-band

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1/ *See* 47 C.F.R. § 5.54; *see also id*. § 5.71.

2/ *See Auction of Flexible-Use Service Licenses in the 3.7-3.98 GHz Band Closes; Winning Bidders Announced for Auction 107*, Public Notice, 36 FCC Rcd 4318, at Attach. A (2021).

3/ *See Wireless Telecommunications Bureau Grants Auction 107 Licenses*, Public Notice, 36 FCC Rcd 10972 (2021).

4/ *See Expanding Flexible Use of the 3.7-4.2 GHz Band*, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343 (2020) ("*C-band Order*"); *see also* News Release, *C-Band Spectrum Will Be Made Available for 5G Services on an Accelerated Basis*, FCC (June 1, 2020), https://docs.fcc.gov/public/attachments/DOC-364655A1.pdf.

5/ *See Wireless Telecommunications Bureau Seeks Comment on C-Band Phase II Certification of Accelerated Relocation Procedures and Implementation of the Commission's Incremental Reduction Plan for Phase II Accelerated Relocation Payments*, Public Notice, DA 23-204 (rel. Mar. 13, 2023).

licenses held by T-Mobile prior to December 5, 2023. However, unless and until those certifications are filed and validated by the Bureau, T-Mobile has no guarantee that it will have access to the spectrum until December 5, 2023, or even until the final relocation deadline of December 5, 2025.[6/]

T-Mobile has nevertheless been actively preparing for the deployment of its C-band licenses. In particular, T-Mobile has submitted several applications for experimental authorization to evaluate use of the spectrum for 5G NR services.[7/] And all of those applications have been granted.[8/] That includes the most recent application T-Mobile filed on November 9, 2022, which, like this application, requested experimental authorization to operate using C-band spectrum for which T-Mobile is licensed and at locations where T-Mobile has been authorized to operate on a permanent basis.[9/] T-Mobile's November 2022 application, which was also coordinated with the FAA, was granted on January 10, 2023, under the call sign WN2XFH.[10/] T-Mobile now requests experimental authorization to conduct testing using its licensed C-band spectrum in *additional* markets under similar operating conditions as the experimental authorization granted under call sign WN2XFH.

B. Purpose of Operation and Need for Experimental License

Like T-Mobile's experimental authorization under call sign WN2XFH, grant of the instant request would serve the public interest because it would allow T-Mobile to continue to experiment, in cooperation with equipment manufacturers and the FAA, to assess the potential use of C-band spectrum for 5G NR operations while incumbent satellite operators continue to clear the spectrum. It would permit T-Mobile to conduct its experimental operations in additional markets for which it was authorized, using the exact portion of the spectrum blocks for which it was awarded licenses. When combined with T-Mobile's existing experimental

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6/ *See C-band Order* ¶ 155 (establishing a final relocation deadline of December 5, 2025). That is also why T-Mobile has requested a full, two-year authorization as permitted by the rules. *See* 47 C.F.R. § 5.71 (stating that, for conventional experimental authorizations, "[t]he regular license term is 2 years").

7/ *See, e.g.*, Application for Experimental Authorization of T-Mobile License LLC, ELS File No. 0605-EX-CN-2020 (filed July 20, 2020); Application for Modification of Experimental Authorization of T-Mobile License LLC, ELS File No. 0140-EX-CM-2021 (filed July 14, 2021); Application for Modification of Experimental Authorization of T-Mobile License LLC, ELS File No. 0200-EX-CM-2021 (filed Aug. 31, 2021); Application for Special Temporary Authority of T-Mobile License LLC, ELS File No. 0444-EX-ST-2022 (filed Mar. 3, 2022).

8/ *See, e.g.*, FCC Experimental Authorization (Call Sign WL2XDE); FCC Special Temporary Authority (Call Sign WT9XKR).

9/ *See* Application for Experimental Authorization of T-Mobile License LLC, ELS File No. 1360-EX-CN-2022 (filed Nov. 9, 2022) (as amended) (requesting authority to operate on C-band spectrum for which T-Mobile is licensed in and around multiple locations in California, New Jersey, Texas, Kansas, Missouri, and Washington).

10/ *See* FCC Experimental Authorization (Call Sign WN2XFH).

authority, grant of this request will better enable T-Mobile to assess the use of C-band spectrum in its network across its licensed markets under real-world circumstances. Indeed, T-Mobile intends to utilize both experimental authorizations to deploy its operations as soon as possible after the spectrum is fully cleared, further accelerating the delivery of advanced communications services to the public.

C. Restrictions on Operation

T-Mobile will restrict its experimental operations in the same ways as its current experimental authorization under call sign WN2XFH. *First*, T-Mobile will limit its experimental operations to only the spectrum it won in the C-band auction at each location requested. *Second*, T-Mobile will confine its experimental operations to only those specific locations within the PEAs where it has received permanent authorization to deploy C-band spectrum. Additionally, as noted below, T-Mobile has coordinated its proposed operations with the FAA to ensure that there are no adverse impacts to radio altimeters or aviation safety. *Finally*, T-Mobile will conduct its experimental testing under the emission parameters coordinated with the FAA. T-Mobile will also actively work with equipment manufacturers during the authorized period to test equipment and minimize interference. And it will conduct its operations consistent with the Commission's equipment marketing and importation rules.[11/]

D. Protection Against Causing Interference

There will be minimal, if any, impact on the spectrum environment in and around each location by grant of the experimental authorization. As noted above, T-Mobile has coordinated with the FAA to ensure that its proposed experimental operations will not affect altimeter use near any of the airports identified by the FAA.[12/] In fact, like its November 2022 request, T-Mobile has already provided the FAA with a list of sites at which it proposes to conduct experimental operations and coordinated its proposed operations with the FAA at these sites.[13/] And the FAA and T-Mobile have agreed to T-Mobile commencing its experimental operations after April 1,

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11/ *See* 47 C.F.R. § 2.803.

12/ *See* Federal Aviation Administration, *Airports with 5G Buffer* (Jan. 2, 2022), https://www.faa.gov/sites/faa.gov/files/2022-01/50%20Airports%20with%205G%20Buffer.pdf.

13/ As the Commission is aware, wireless carriers have also been working collaboratively with the National Telecommunications and Information Administration, Department of Defense, and the FAA to address the FAA's concerns that 5G C-band signals may affect aviation safety. *See, e.g.*, *Airworthiness Directives; Bombardier, Inc., Airplanes*, FAA, 88 Fed. Reg. 11784 (Feb. 24, 2023) (revising the limitations and operating procedures sections in the flight manuals for certain Bombardier, Inc. airplanes to incorporate specific procedures when in the presence of 5G interference); David Shepardson, *U.S. FAA Proposes Requiring 5G Safeguards on Planes by Early 2024*, REUTERS (Jan. 9, 2023, 2:29 P.M. EST) (noting that the wireless industry finds the FAA's proposal for radio altimeter and filter installation to be both "reasonable and practical"); FRANK H. SANDERS ET AL., NTIA, MEASUREMENTS OF 5G NEW RADIO SPECTRAL AND SPATIAL POWER EMISSIONS FOR RADAR ALTIMETER INTERFERENCE ANALYSIS (Oct. 2022), https://its.ntia.gov/umbraco/surface/download/publication?reportNumber=TR-22-562.pdf.

2023. Current operations under call sign WN2XFH have demonstrated that coordinating with the FAA in this manner has been successful.

In addition, there will be no harmful interference to incumbent C-band earth stations. All five incumbent satellite operators have filed their Phase I certifications stating that they have completed their Phase I clearing obligations, and each of those certifications has been validated by the Wireless Telecommunications Bureau.[14/] Moreover, while there is no certainty that Phase II clearing will be complete by December 5, 2023 (which is why T-Mobile has requested experimental authorization through April 26, 2025), all five incumbent satellite operators have reported important progress in meeting that goal.[15/] That means there are few remaining earth stations that could be affected by grant of this experimental authorization. In any case, T-Mobile will identify the earth stations nearest to its proposed operations in the areas it will operate and will coordinate its experimental operations with those earth station operators as it has done in the past. T-Mobile will immediately cease transmissions if those operators experience harmful interference.

T-Mobile has established a point of contact identified below with "kill switch" authority should any harmful interference occur:

Chris Wieczorek
T-Mobile USA, Inc.
601 Pennsylvania Ave., NW
Washington, DC 20004
202-654-5913
chris.wieczorek@t-mobile.com

Finally, T-Mobile recognizes that experimental authorizations are issued on a secondary basis only and that grant of the application will provide it with no additional rights to permanently operate on the spectrum covered by the authorization. To the contrary, because T-Mobile is already licensed to operate in the C-band, no reliance interest will be created by grant of this request.

[14/] *See, e.g.*, *Expanding Flexible Use of the 3.7-4.2 GHz Band; Phase I Certification of Accelerated Relocation of Intelsat License LLC, Debtor in Possession, as Amended*, Order, 36 FCC Rcd 15844 (2021); *Expanding Flexible Use of the 3.7-4.2 GHz Band; Phase I Certification of Accelerated Relocation of SES Americom, Inc., as Amended*, Order, 36 FCC Rcd 16432 (2021).

[15/] *See, e.g.*, Letter from Carlos M. Nalda, LMI Advisors, Consultant to Eutelsat Americas, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Jan. 12, 2023); Henry Gola, Wiley Rein LLP, Counsel for Intelsat US LLC, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122 (filed Feb. 22, 2023); Letter from Christophe De Hauwer, Chief Development Officer, SES Americom, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket Nos. 18-122 and 20-173 (filed Dec. 30, 2022).